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PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

Claims

1. (currently amended) A method of monitoring performance of a wireless system, comprising:
 - a) transmitting a communication signal from a mobile wireless device to a radio base station;
 - b) obtaining uplink performance parameters associated with the communication signal;
 - c) obtaining location information of the mobile wireless device by analyzing the communication signal; and
 - d) evaluating the performance of the wireless system using the uplink performance parameters associated with the communication signal received from the mobile wireless device and the location information of the mobile wireless device.
2. (original) The method of claim 1, wherein the step of evaluating the performance of the wireless system is performed in real-time.
3. (previously presented) The method of claim 1, wherein the location information of the mobile wireless device is collected from a plurality of radio base stations.
4. (original) The method of claim 1, wherein the step of obtaining the location information involves analyzing timestamp data.
5. (original) The method of claim 1, wherein the step of obtaining the location information involves using a time difference of arrival location processor.

MJ:mj 06/10/05 394042 472.US
PATENT

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6. (previously presented) The method of claim 5, wherein the time difference of arrival location processor is in the mobile wireless device.
7. (original) The method of claim 5, wherein the time difference of arrival location processor is in the wireless system.
8. (previously presented) A method of monitoring performance of a wireless system including a radio base station and a mobile wireless device, the method comprising:
- a) transmitting a communication signal from the mobile wireless device to the radio base station;
 - b) obtaining uplink performance parameters associated with the communication signal;
 - c) obtaining location information of the mobile wireless device; and
 - d) evaluating the performance of the wireless system using the uplink performance parameters and the location information of the mobile wireless device.
9. (previously presented) The method of monitoring performance of a wireless system according to claim 8, wherein obtaining location information of the mobile wireless device is accomplished using a global positioning system unit in the mobile wireless device.
10. (previously presented) The method of monitoring performance of a wireless system according to claim 8, wherein obtaining location information of the mobile wireless device is

MJ:mj 06/10/05 394042 472.US
PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

accomplished using RF finger printing using dispersion characteristics of the communication signal.

11. (previously presented) A method of monitoring performance of a wireless system, comprising:

- a) transmitting a communication signal from a plurality of mobile wireless devices to a radio base station;
- b) obtaining uplink performance parameters associated with the communication signals;
- c) obtaining location information of the plurality of mobile wireless devices by analyzing the communication signal; and
- d) evaluating the performance of the wireless system using the uplink performance parameters and the location information of each of the plurality of mobile wireless devices.

12. (original) The method of claim 11, wherein the step of evaluating the performance of the wireless system is performed in real-time.

13. (previously presented) The method of claim 11, wherein the location information of the plurality of mobile wireless devices is collected from a plurality of radio base stations.

14. (original) The method of claim 11, wherein the step of obtaining the location information involves analyzing timestamp data.

MJ:mj 06/10/05 394042 472.US
PATENT

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Application Number 09/745,268

15. (original) The method of claim 11, wherein the step of obtaining the location information involves using a time difference of arrival location processor.
16. (previously presented) The method of claim 15, wherein a time difference of arrival location processor is in each of the plurality of mobile wireless devices.
17. (original) The method of claim 15, wherein the time difference of arrival location processor is in the wireless system.
18. (previously presented) A method of monitoring performance of a wireless system including at least one radio base station and a plurality of mobile wireless devices, the method comprising:
- a) transmitting respective communication signals from the plurality of mobile wireless devices to the at least one radio base station;
 - b) obtaining uplink performance parameters associated with communication signals;
 - c) obtaining location information of the plurality of mobile wireless devices; and
 - d) evaluating the performance of the wireless system using the uplink performance parameters and the location information of the plurality of mobile wireless devices.
19. (previously presented) The method of monitoring performance of a wireless system according to claim 18, wherein obtaining location information of the plurality of mobile wireless devices is accomplished using a global positioning system unit in each of the plurality of mobile wireless devices.

MJ:mj 06/10/05 394042 472.US
PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

20. (previously presented) The method of monitoring performance of a wireless system according to claim 18, wherein obtaining location information of each of the plurality of mobile wireless devices is accomplished using RF finger printing using dispersion characteristics of the communication signals.

21. (original) A system for monitoring performance of a wireless system, said system comprising:

a plurality of wireless devices which transmit communications signals to a radio base station;

a first receiver located at the radio base station which receives the communication signals and transmits the communication signals to a switch;

a second receiver located at the radio base station which monitors the communication signals and transmits timestamp data associated with the communication signals to the switch;
and

a system analyzer coupled to the switch which evaluates the performance of the wireless system based on uplink performance parameters and the location of the wireless devices.

22. (original) The system of claim 21, wherein a time difference of arrival location processor is coupled to the switch and to the system analyzer.

23. (original) A system for monitoring performance of a wireless system, said system comprising:

MJ:mj 06/10/05 394042 472.US
PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

a plurality of wireless devices which transmit communications signals to a radio base station;

a first means for receiving the communication signals and transmitting the communication signals to a switch;

a second means for monitoring the communication signals and transmitting timestamp data associated with the communication signals to the switch; and

a system analyzer coupled to the switch which evaluates the performance of the wireless system based on uplink performance parameters and the location of the wireless devices.

24. (original) A system for monitoring performance of a wireless system, the wireless system including a plurality of wireless devices transmitting communication signals to a radio base station, said system comprising:

a first receiver located at the radio base station that receives the communication signals and transmits the communication signals to a switch;

a second receiver located at the radio base station which receives location information associated with each of the plurality of wireless devices; and

a system analyzer coupled to the switch which evaluates the performance of the wireless system based on uplink performance parameters and the location of the wireless devices.

25. (original) The system of claim 24, wherein the second receiver receives location information using RF finger printing data associated with distortion characteristics of the communication signals.

MJ:mj 06/10/05 394042 472.US
PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

26. (original) The system of claim 24, wherein the second receiver receives location information from global position system units in each of the plurality of wireless devices.

27. (original) A system for monitoring performance of a wireless system, the wireless system including a wireless device transmitting a communication signal to a radio base station, said system comprising:

a first receiver located at the radio base station that receives the communication signals and transmits the communication signals to a switch;

a location measurement unit in the wireless device that determines the location of the wireless device; and

a system analyzer coupled to the switch which evaluates the performance of the wireless system based on uplink performance parameters and the location of the wireless device.

28. (original) The system of claim 27, wherein the location information measurement unit is associated with a time difference of arrival technique.

29. (original) A system for monitoring performance of a wireless system, the wireless system including a wireless device transmitting a communication signal to a radio base station, said system comprising:

a first receiver located at the radio base station that receives the communication signals with uplink performance parameters, and transmits data associated with the uplink performance parameters to the wireless device;

MJ:mj 06/10/05 394042 472.US
PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

a location measurement unit in the wireless device that determines the location of the wireless device; and

a system analyzer on the wireless device that evaluates the performance of the wireless system based on uplink performance parameters and the location of the wireless device.

30. (new) The method of claim 1, further comprising locating a geographical area associated with faulty coverage based on the performance evaluation.

31. (new) The method of claim 1, wherein the evaluation is based on mobile-assisted handoff information.

32. (new) The method of claim 1, further comprising generating an information report concerning signal coverage of a geographical area based on the performance evaluation.

33. (new) The method of claim 1, further comprising adjusting the radio base station based on the performance evaluation.

34. (new) The system for monitoring performance of a wireless system of claim 21, wherein the system analyzer is configured to indicate a geographical location associated with faulty coverage based on the performance evaluation.

35. (new) A method of assessing wireless system performance, comprising:
collecting downlink call data associated with a call to a mobile wireless device;

MJ:mj 06/10/05 394042 472.US
PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

collecting uplink call data associated with the call to the mobile wireless device;
obtaining location information associated with the mobile wireless device; and
based on the downlink call data, the uplink call data, and the location information,
evaluating system performance.

36. (new) The method of claim 35, further comprising removing transient effects from
the system performance evaluation based on the uplink call data and the location information.